INSTALLATION/OPERATION

DX1104-080
Digital Video Recorder

C617M-A (7/04)

Contents

Contents 2

List of Illustrations 3

List of Tables 3

Important Safety Instructions 4

Description 5
- Optional Customer-Supplied Items 5

Installation 6

Programming 8
- Camera Menu 9
- All Resolution Menu 12
- Alarm Output Menu 13
- Time Menu 15
- Password Menu 16
- Program Update Menu 17
- Help 19

Operation 20
- Viewing Cameras 20
- Recording 20
  - Manual Recording 20
  - Automatic Scheduled Recording 20
  - Automatic Event Recording 21
- Saving Video 21
- Transferring Data Using a USB Flash Drive 21
- Playback 23
  - Start Playback 23
  - Search 23
  - Fast Playback 23
  - Pause Playback 23
  - Frame-by-Frame Playback 24
  - Change Camera Being Played Back 24
  - Stop Playback 24
  - Playback Following Time Changes 24
- Viewing Recordings on a PC 25
- Power Failure 25
- Alarm Operation 25
  - Alarm Relay Output Operation 26

Troubleshooting 27

Specifications 28
  - Electrical/Video 28
  - Mechanical 28
  - General 28
  - Regulatory Notices 29

List of Illustrations

1 DX1100 Series DVR Front Panel 5
2 DX1100 Series DVR Installation 6
3 Menu Tree 8
4 Recording and Playback When Hour Is Set Back 24

List of Tables

A Video Coaxial Cable Requirements 7
B Maximum Frames per Second. 10

Important Safety Instructions

Observe the following warnings before installing and using this product:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases shall be placed on the apparatus.
16. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
17. Installation should be done only by qualified service personnel and conform to all local codes.
18. The socket-outlet shall be installed near the equipment and shall be easily accessible.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Only use replacement parts recommended by Pelco.

The product and/or manual may bear the following marks:

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

CAUTION:
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

Description

The DX1104-080 digital video recorder (DVR) is a compact recorder that can store and play back images from four cameras and audio from one camera. The DVR can be placed on a shelf or desktop for easy access to the front panel controls for operation and programming.

Live video from all four cameras can be viewed while recording. Recording can be done continuously or for a scheduled time in a 24-hour period. Each camera has its own alarm input for alarm recording.

An 80 GB hard drive generally allows continuous recording up to four weeks under the most common recording conditions. Recording time will vary depending on image size, number of cameras recorded, resolution selection, and record rate.

Recording can be stopped at any time to play back video. Search functions during playback allow frame-by-frame viewing, fast playback, and playback of alarm events.

The DVR uses proprietary compression algorithms to prevent alteration of the video image, as well as password protection to guard against unauthorized or unintentional recording or playback.

The DX1104-080 lets you load the latest software version (available from Pelco's web site) into the DVR via a USB flash drive that is supplied with the DVR. The USB flash drive can also be used to save recorded video and audio from the DVR to a PC.

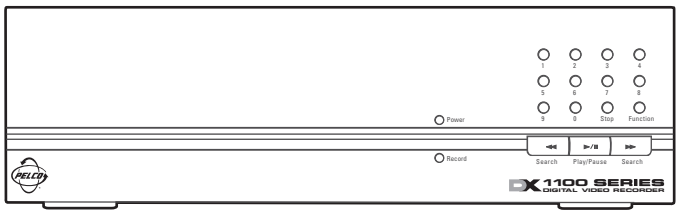


Figure 1. DX1100 Series DVR Front Panel

OPTIONAL CUSTOMER-SUPPLIED ITEMS

- A preamplified microphone is needed to record audio.
- PC with the following minimum requirements:
  - Windows® 98, 2000, or XP operating system
  - Pentium® CPU (128 MB SDRAM and 400 MHz processing speed)
  - Matrox G400™ video card (16 MB memory)
  - Sound Blaster®-compatible card

Installation

The following parts are supplied:

1 DX1100 Series DVR

1 230 VAC power cord adapter

1 USB extension cable (for connecting non-adjacent equipment)

1 USB flash drive (USB 1.1 compliant) (Supplied for a limited time only)

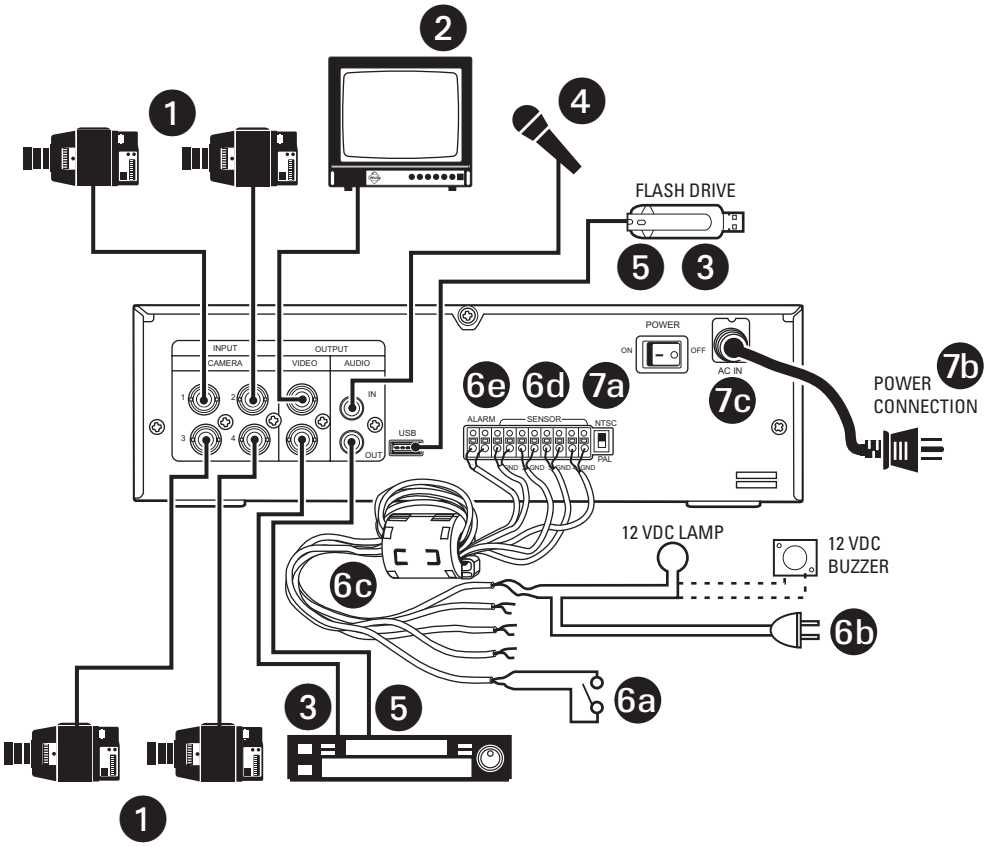


Figure 2. DX1100 Series DVR Installation

WARNING: Adequate ventilation is required for proper operation of the DVR. Allow two inches of space above the unit and on each side for air circulation.

1. Connect cameras to the CAMERA INPUT connectors (BNC) on the rear of the DVR. Refer to Table A for video coaxial cable distances.
2. Connect a monitor to one of the VIDEO OUTPUT connectors (BNC) on the rear of the DVR. Refer to Table A for video coaxial cable distances.
3. To save data from the DVR, use the USB flash drive or connect a peripheral recording device to the remaining VIDEO OUTPUT connector (BNC) on the rear of the DVR. Refer to Table A for video coaxial cable distances.

Table A. Video Coaxial Cable Requirements

Cable Type*	Maximum Distance
RG59/U	750 ft (229 m)
RG6/U	1,000 ft (305 m)
RG11/U	1,500 ft (457 m)

*Minimum cable requirements:
75 ohms impedance
All-copper center conductor
All-copper braided shield with 95% braid coverage

4. If audio is desired, connect a preamplified microphone to the AUDIO IN jack on the rear of the DVR.

   NOTE: Before using the DX1104-080's audio recording feature, consult your location's applicable laws regarding audio surveillance.

5. To save audio from the DVR, use the USB flash drive or connect a peripheral recording device to the AUDIO OUT jack on the rear of the DVR.
6. Connect alarm inputs and alarm relay output as follows:
   a. Inputs – Connect wiring (not supplied) to your alarms (not supplied). Two wires are required for each alarm. You can have one alarm for each camera.
   b. Output – Connect wiring (not supplied) to a 12 VDC light or buzzer (not supplied). Two wires are required.
   c. Bring the alarm input and output wiring to the back of the DVR and thread the wiring through the Induced Voltage Protector (supplied). Loop the wiring over the voltage protector and thread it through the voltage protector a second time.
   d. Connect the alarm input wires to the SENSOR connectors.
   e. Connect the light or buzzer to the ALARM output connectors.
7. Connect the recorder to power.
   a. Place the NTSC/PAL switch in the proper mode.
   b. If applicable, connect the 230 VAC adapter to the end of the power cord. Plug in the power cord.
   c. Turn on the DVR. When the recorder is turned on for the first time, the Help screens will appear on the monitor. To bypass the Help screens, press the Play/Pause button.
8. Turn on the cameras and monitor. The DVR begins recording the cameras.

   IMPORTANT: If you have any unused camera inputs, the video appears washed out. The degree of washout depends on how many inputs have no cameras connected to them. If only one camera is connected, the video is completely washed out. When you program the DVR (step 11), you must **turn off any unused camera inputs.** Video will then appear normal.

9. Go to *Time Menu* in the *Programming* section and set the time and date.
10. Initialize the DVR. Refer to the instructions on the separate sheet included with this manual.

    This is a necessary step as the DVR may not operate properly during playback and search operation if there are conflicts in the date and time.

11. Proceed to the *Programming* section to set up the recording parameters and enter a password (optional).

Programming

Programming allows you to configure camera, audio, and alarm operation; set the system date and time; define a password; and update the program.

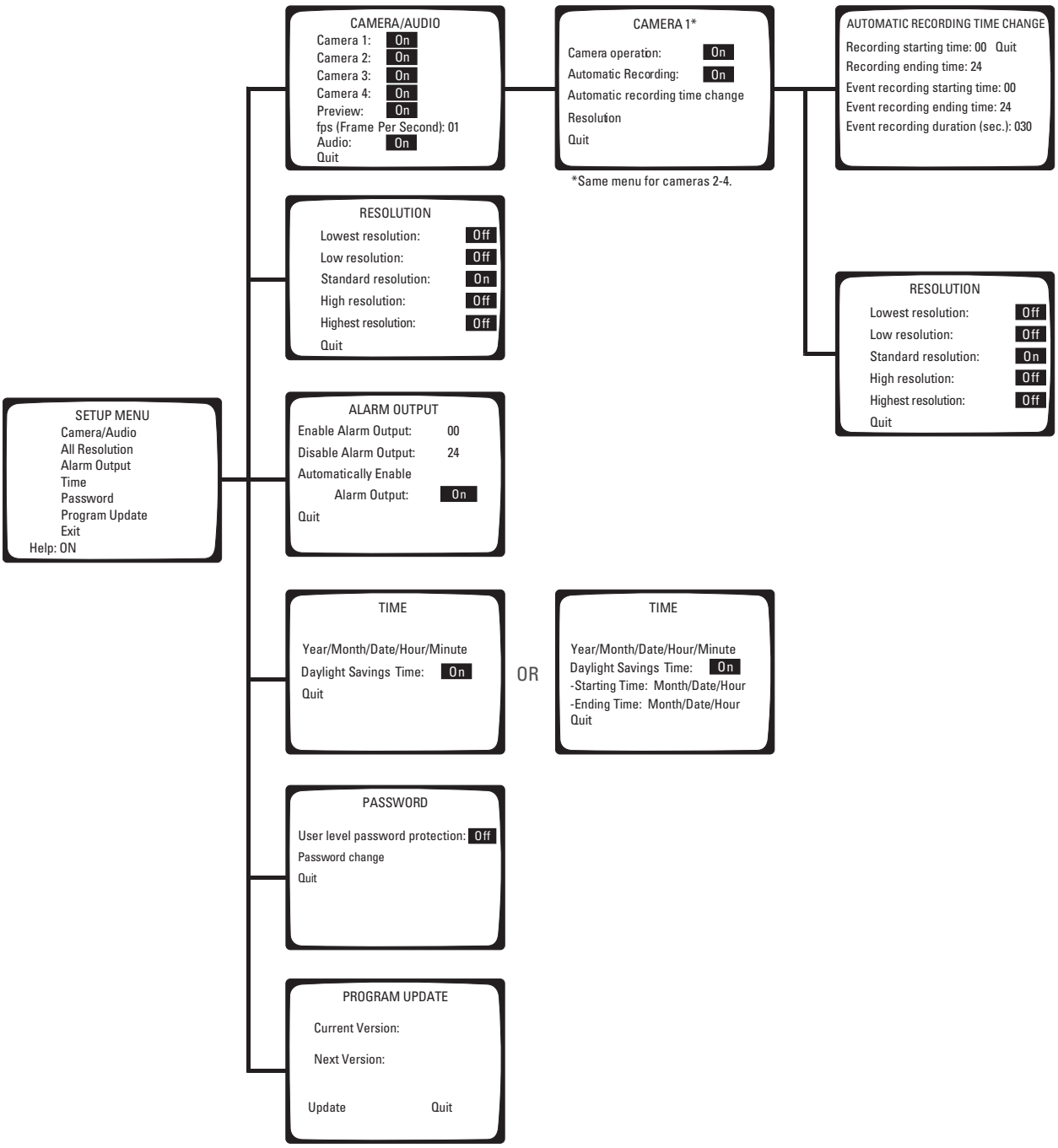


Figure 3. Menu Tree

CAMERA MENU

Use this menu to define the following:

- Which cameras the DVR will record
- Whether starting and stopping of recording will be done manually or automatically
- What the record rate (frames per second) will be
- What the recording resolution (low to high) will be
- Whether live video can be viewed in record mode
- Starting and stopping times for scheduled recording
- Whether audio recording will be on or off

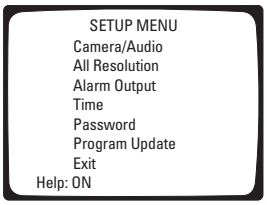
TIP: You can return to the previous menu at any time by pressing the Stop button.

Skip steps 1 and 2 if you are already in the Setup Menu.

1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◄◄ : Alarm On
►► : Alarm Off

2. Press and release the 0 button, and then release the Function button. Enter the password if requested. The Setup Menu appears.



3. Use the Search (<</>>) buttons to move around within the menu. Highlight Camera/Audio and then press the Play/Pause button to select. The Camera menu appears.

4. If the Preview field shows On, live video from the cameras will appear on the monitor while the DVR is recording or is in recording standby mode (not recording).

   If the Preview field shows Off, live video will not be shown.

   To change the Preview status, use the Search (<</>>) buttons to highlight Preview, and then press the Play/Pause button to toggle between On and Off.

5. The fps (Frame Per Second) field shows the recording rate for all cameras.

   To change the fps, use the Search (<</>>) buttons to highlight fps, and then use the number keypad to enter the frames per second. The maximum frames per second is determined by the number of cameras being recorded and whether the Preview feature is on or off. Refer to Table B for the maximum frames per second.

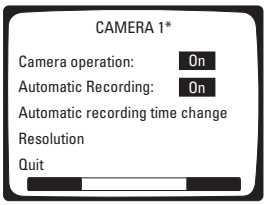
Table B. Maximum Frames per Second

Cameras	Preview On	Preview Off
1	15	30
2	5	7
3	3	5
4	2	3

6. If the Audio field shows ON, audio from the cameras will be recorded while the DVR is recording. If the field shows OFF, audio will not be recorded (even though video may be).

   To change audio recording, use the Search (<</>>) buttons to highlight Audio, and then press the Play/Pause button to toggle between On and Off.

7. To configure any of the four cameras, use the Search (<</>>) buttons to highlight the camera number, and then press the Play/Pause button. The menu for that camera appears.



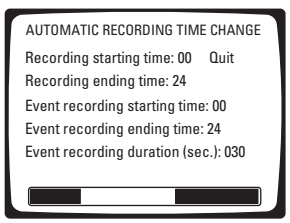
*Same menu for cameras 2-4.

8. **CAMERA OPERATION**
   Use the Search (<</>>) buttons to highlight Camera Operation, and then press the Play/Pause button to toggle between On or Off. On means the DVR will record video for that channel, and Off means it will not record video, even if a camera is connected.

   IMPORTANT NOTE: If camera inputs are not used, make sure Camera Operation is OFF. Video washout occurs if unused inputs are left on. The degree of washout depends on how many inputs have no cameras connected to them. The most severe case is when all inputs are turned on but only one camera is connected; in this case the video is completely washed out.

9. **AUTOMATIC RECORDING**
   Use the Search (<</>>) buttons to highlight Automatic Recording, and then press the Play/Pause button to toggle between On or Off. On means the DVR will record automatically during the times you will select in the following steps. Off means you will manually turn the recorder on and off.

10. **AUTOMATIC RECORDING TIME CHANGE**
    Use the Search (<</>>) buttons to highlight Automatic Recording Time Change, and then press the Play/Pause button to select. The Automatic Recording Time Change menu appears.


AUTOMATIC RECORDING TIME CHANGE
Recording starting time: 00 Quit
Recording ending time: 24
Event recording starting time: 00
Event recording ending time: 24
Event recording duration (sec.): 030

11. Use the Search (<</>>) buttons to highlight each field in the menu.

Recording Times
The recorder will record continuously between the specified times. Use the number buttons to enter the hour of the starting time and ending time. Enter two digits. Enter the hours in 24-hour format. For example, enter 08 for 8 a.m. and 15 for 3 p.m. For 24-hour recording, enter a start time of 00 and an ending time of 24. For no recording, enter a start time of 24 and an end time of 00.

Event Recording Times
Event recording means the recorder will only record if there are alarms during the specified time period. Use the number buttons to enter the hour of the starting time and ending time. Enter two digits. Enter the hours in 24-hour format. For example, enter 08 for 8 a.m. and 15 for 3 p.m. For 24-hour recording, enter a start time of 00 and an ending time of 24. For no recording, enter a start time of 24 and an end time of 00.

NOTE: Recording and event recording times should be set for different time periods. For example, you may want to record continuously in the daytime when there is a lot of activity, but record only alarms at night.

Event Recording Duration
This is the time the recorder will continue recording after the alarm goes away. The time can be set from 0 to 200 seconds.

Recording Bar
At the bottom of the screen is a bar that shows when recording will occur. Red is for continuous recording, blue is for event recording, and white is for no recording. If you overlap the continuous and event recording times, the bar will be red.

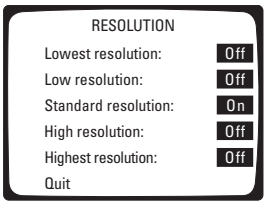
Quit
When you finish entering the times, use the Search (<</>>) buttons to highlight Quit, and then press the Play/Pause button to select. The Camera Number menu appears.

12. **RESOLUTION**
In this step the camera's resolution is set. You can set each camera's resolution individually, allowing you to use different resolutions for the different cameras. Or you can set the resolution for all cameras at one time; in this case, the resolution will be the same for all cameras.

To set each camera's resolution individually, follow the steps below.

If you want to use the same resolution for all cameras, skip this step and proceed to step 13 to finish the individual setup of cameras. Then set the resolution for all cameras in the All Resolution menu (next section).

a. Use the Search (<</>>) buttons to highlight Resolution, and then press the Play/Pause button to select. The Resolution menu appears.



b. Use the Search (<</>>) buttons to highlight a resolution, and then press the Play/Pause button. When one resolution is turned On, all others are set to Off.

c. Use the Search (<</>>) buttons to highlight Quit, and then press the Play/Pause button to select. The Camera Number menu appears.

d. Use the Search (<</>>) buttons to highlight Quit, and then press the Play/Pause button to select. The Camera menu appears.

13. Repeat steps 7-12 to configure other cameras. When you finish configuring all cameras, press the Stop button as many times as necessary to return to the Setup Menu. Highlight another menu item in the Setup Menu and then press the Play/Pause button to select it, or highlight Exit and then press the Play/Pause button to end the programming session.

ALL RESOLUTION MENU

Use this menu to set the resolution for all cameras. If you want to use different resolutions for the cameras, set the resolutions in the Camera menu (previous section).

NOTES: Setting the resolution in this menu will overwrite all camera resolution settings made in the individual camera settings (step 12 of previous section).

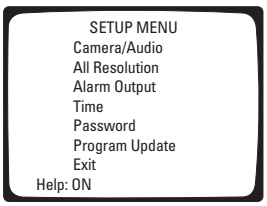
Higher resolutions require more disk storage space, reducing the recording time; lower resolutions need less disk space, increasing the recording time.

Skip steps 1 and 2 if you are already in the Setup Menu.

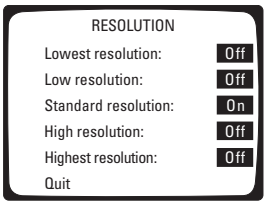
1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◄◄ : Alarm On
►► : Alarm Off

2. Press and release the 0 button, and then release the Function button. Enter the password if requested. The Setup Menu appears.



3. Use the Search (<</>>) buttons to highlight All Resolution, and then press the Play/Pause button to select. The All Resolution menu appears.



4. Use the Search (<</>>) buttons to highlight a resolution, and then press the Play/Pause button. When one resolution is turned On, all others are set Off.
5. Use the Search (<</>>) buttons to highlight Quit, and then press the Play/Pause button to select. The Setup Menu appears.

TIP: Pressing the Stop button also returns you to the Setup Menu.

6. Use the Search (<</>>) buttons to highlight another menu item in the Setup Menu and then press the Play/Pause button to select it, or highlight Exit and then press the Play/Pause button to end the programming session.

ALARM OUTPUT MENU

The ALARM output on the rear panel is a single-pole, normally open, latching, dry contact. This output can be used to notify you if there has been an alarm event that might require review. The alarm output can be enabled or disabled (armed/disarmed) manually, or it can be programmed to enable (arm) or disable (disarm) at the same time automatically every day.

If the output is enabled and an alarm input is activated, the output relay will latch closed after a 20-second delay and will remain closed until it is manually disabled. The 20-second delay allows you to enter your premises and disable the alarm output before it is activated.

The alarm output menu is used to set up automatic arming and disarming of the relay at specified times each day. (For manual operation, refer to *Alarm Relay Output Operation* in the *Operation* section.) This feature may be used in conjunction with the event recording capabilities of the DX1100 to notify you that an alarm event was recorded.

NOTE: The alarm output programming does not affect recording. It only affects the operation of the alarm output relay. For event (alarm) recording, refer to *Recording* in the *Operation* section.

Application example:

A company has a rear door that is not to be opened for any reason between 5 p.m. and 7 a.m. During the day, the area around this door is recorded continuously, but to conserve disk space, the area is only recorded at night if the door is opened. The owner does not want to review the video unless the door was opened after hours.

In this case, the alarm output would be programmed to enable at 5 p.m. and disable at 7 a.m. The DX1100 would also be programmed for automatic (continuous) recording from 7 a.m. to 5 p.m. and event recording from 5 p.m. to 7 a.m. (refer to *Camera Menu* in the *Programming* section).

At 5 p.m. continuous recording would cease. If an alarm input is activated, the DVR would immediately begin recording the associated camera. The relay would latch closed after the 20-second delay. When the owner returned in the morning, a light attached to the relay output would be on, indicating that there was an alarm during the night. A search for recorded video starting at 5 p.m. would immediately take you to the first alarm event. All other events could be reviewed in sequence.

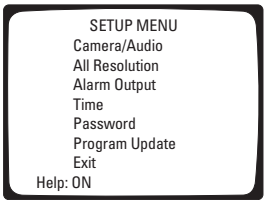
To program the relay for automatic arming/disarming:

Skip steps 1 and 2 if you are already in the Setup Menu.

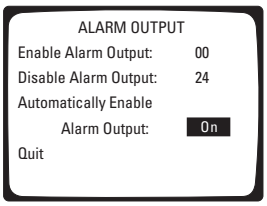
1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◄◄ : Alarm On
►► : Alarm Off

2. Press and release the 0 button, and then release the Function button. Enter the password if requested. The Setup Menu appears.



3. Use the Search (<</>>) buttons to move around within the menu. Highlight Alarm Output and press the Play/Pause button to select. The Alarm Output menu appears.



4. Use the Search (<</>>) buttons to highlight the fields for starting and ending times. When you highlight a field, use the number buttons to enter the time. The starting and ending times refer to the hour. Enter two digits. Enter the hours in 24-hour format. For example, enter 08 for 8 a.m. and 15 for 3 p.m.

   At the bottom of the screen is a bar that shows the hours when the alarm output will be enabled. Red means enabled and white means disabled.

5. Use the Search (<</>>) buttons to highlight Automatically Enable Alarm Output, and then press the Play/Pause button to toggle between On or Off.

6. When you finish, use the Search (<</>>) buttons to highlight Quit, and then press the Play/Pause button to select. The Setup Menu appears.

   TIP: Pressing the Stop button also returns you to the Setup Menu.

7. Use the Search (<</>>) buttons to highlight another menu item in the Setup Menu and then press the Play/Pause button to select it, or highlight Exit and then press the Play/Pause button to end the programming session.

TIME MENU

The DVR uses the time and date to index video on the hard disk drive so you can find it later. Changing the time can cause the DVR to work improperly when you try to play back video. If you set the hour ahead, this is not a problem. But if you set the hour back, there will be more than one recording at the same time. Therefore, you should refrain from making frequent changes as this will complicate searching by time and date. For more information, refer to *Playback Following Time Changes* in the *Operation* section.

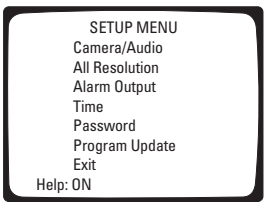
To set the system time and date:

Skip steps 1 and 2 if you are already in the Setup Menu.

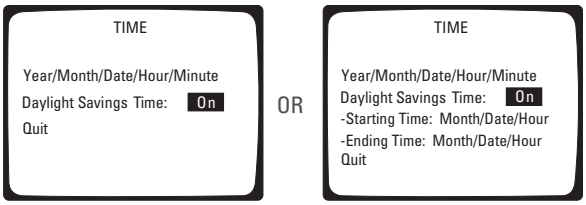
1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◄◄ : Alarm On
►► : Alarm Off

2. Press and release the 0 button, and then release the Function button. Enter the password if requested. The Setup Menu appears.



3. Use the Search (<</>>) buttons to move around within the menu. Highlight Time and press the Play/Pause button to select. The Time menu appears.



4. There are five fields for entering the date and time. The fields, from left to right, are for the year, month, day, hour, and minute. Use the Search (<</>>) buttons to move between the fields. In each field enter two digits. For numbers below 10, enter a 0 as the first digit. Enter the hour in 24-hour format; for example, 08 is 8 a.m. and 15 is 3 p.m.
5. Use the Search (<</>>) buttons to highlight Daylight Savings Time, and then press the Play/Pause button to toggle between On or Off. If your unit is set for PAL operation, also enter the starting and ending times.
6. Use the Search (<</>>) buttons to highlight Quit, and then press the Play/Pause button to select. The Setup Menu appears.

   TIP: Pressing the Stop button also returns you to the Setup Menu.

7. Use the Search (<</>>) buttons to highlight another menu item in the Setup Menu and then press the Play/Pause button to select it, or highlight Exit and then press the Play/Pause button to end the programming session.

PASSWORD MENU

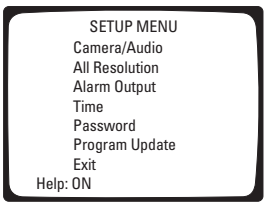
Use this menu to change the password (optional).

Skip steps 1 and 2 if you are already in the Setup Menu.

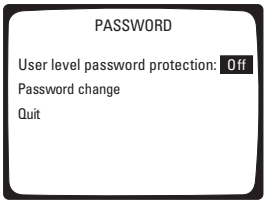
1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◄◄ : Alarm On
►► : Alarm Off

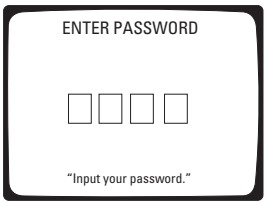
2. Press and release the 0 button, and then release the Function button. Enter the password if requested. The Setup Menu appears.



3. Use the Search (<</>>) buttons to move around within the menu. Highlight Password and press the Play/Pause button to select. The Password menu appears.



4. Use the Search (<</>>) buttons to highlight User Level Password Protection, and then press the Play/Pause button to toggle between On or Off.



5. Use the Search (<</>>) buttons to highlight Password Change, and then press the Play/Pause button to select. The Enter Password screen appears.
6. The DVR ships from the factory with a password of 0000. Enter four numbers for a new password.
7. You will be prompted to verify your password by entering it a second time. If the two passwords agree, "Registered" appears on the screen and then the Password menu reappears. If the passwords do not agree, "Registration Cancelled" appears on the screen and then the Password menu reappears.
8. Use the Search (<</>>) buttons to highlight Quit, and then press the Play/Pause button to select. The Setup Menu appears.

   TIP: Pressing the Stop button also returns you to the Setup Menu.

9. Use the Search (<</>>) buttons to highlight another menu item in the Setup Menu and then press the Play/Pause button to select it, or highlight Exit and then press the Play/Pause button to end the programming session.

PROGRAM UPDATE MENU

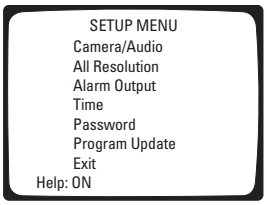
Use this menu to load a newer version of software into your unit. This menu also shows the current version of software that is in your DVR.

NOTE: To perform this update, you will need a USB flash drive (32 MB minimum and FAT or FAT32 format) and a PC to access the Pelco Internet web site (www.pelco.com).

1. Load the new version of software from the Pelco web site onto the USB flash drive. Contact Pelco Technical Support at 1-800-289-9100 if you need assistance.
2. Refer to Figure 2. Once the new software is on the USB flash drive, insert the USB flash drive into the USB port on the DVR.
3. (Skip this step and step 4 if you are already in the Setup Menu.) Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

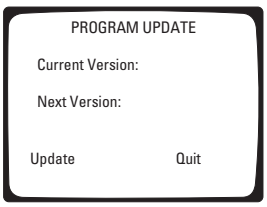
FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◄◄ : Alarm On
►► : Alarm Off

4. Press and release the 0 button, and then release the Function button. Enter the password if requested. The Setup Menu appears.

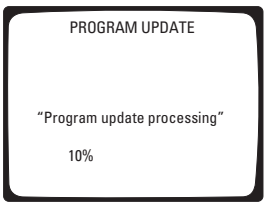


5. Use the Search (<</>>) buttons to move around within the menu. Highlight Program Update and press the Play/Pause button to select. The Program Update screen appears unless one of the following conditions exists.
   - If there is no update file in the USB flash drive, the error message “File name error” appears and you will be returned to the Setup Menu.
   - If the USB flash drive is not inserted in the DVR, the error message “Device not found” appears and you will be returned to the Setup Menu.

   The Program Update screen shows the current software version in the DVR and the new software version that will be updated from the USB flash drive.



6. Use the Search (<</>>) buttons to highlight Update and then press the Play/Pause button to select. (If you do not want to update your program, highlight Quit and press the Play/Pause button.) The update starts and the Program Update Processing screen appears, which shows the progress of the update.



A defect in the USB flash drive or in the file can cause an error, in which case the error message "Error on program update process" appears and you will be returned to the Setup Menu.

7. When the update is finished, the message "Program update completed successfully" appears.

8. *You must reboot* the unit to operate it with the new software. It takes about 10 seconds to reboot the first time following the software update. This lets the DVR safely back up the new software.

   If you fail to reboot the unit, it will operate with the previous software version.

HELP

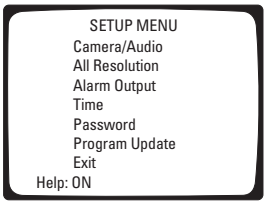
If the Help function is enabled, the Help screens appear on the monitor whenever power is turned on.

Skip steps 1 and 2 if you are already in the Setup Menu.

1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◄◄ : Alarm On
►► : Alarm Off

2. Press and release the 0 button, and then release the Function button. Enter the password if requested. The Setup Menu appears.



3. Use the Search (<</>>) buttons to highlight Help, and then press the Play/Pause button to select ON or OFF.

Operation

The Record LED on the front panel indicates what the DVR is doing.

Recording:	Red (blinking)
Playback:	Green (steady)
Fast Playback:	Green (blinking)
Alarm Event Recording Enabled:	Yellow (steady)
Stop:	Off

VIEWING CAMERAS

If the Preview feature in the Camera menu is On, you can view live video on the monitor. Video is displayed full-screen only if one camera is turned on. If more than one camera is turned on, video is shown in a quad view.

If the Preview feature in the Camera menu is Off, you cannot view live video on the monitor.

RECORDING

MANUAL RECORDING

NOTE: Automatic Recording in the Camera menu must be OFF.

1. Press and hold the Function button. The Function Key list appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◀◀ : Alarm On
▶▶ : Alarm Off

2. Press buttons 1-6 to start or stop recording. Buttons 1-4 are toggle switches: if a camera is recording, pressing a button will stop recording; if a camera is not recording; pressing a button will start recording.
3. Release the Function button. Cameras set to record will record continuously until you repeat steps 1 and 2 and stop recording.

AUTOMATIC SCHEDULED RECORDING

Scheduled recording allows you to program the DVR to turn on and off at specified times each day. This way you record only when you need to and can conserve hard disk drive space. When the hard disk drive is full, the DVR starts to overwrite the oldest data.

NOTE: Turning off certain cameras does not save the video from those cameras. All turning off certain cameras does is provide more disk space to record other cameras. When the hard disk drive is full, the DVR will start overwriting the oldest video recorded.

Refer to *Camera Menu* in the *Programming* section to set the start and stop times for recording.

If you need to stop recording a camera before the programmed end time, you must go back into the programming menus and turn off the automatic recording for that camera.

AUTOMATIC EVENT RECORDING

Event recording allows you to program the DVR to record only when an alarm input is activated. The DVR will record for as long as the alarm input is active. After the alarm goes away, the DVR will continue to record for the programmed time. Event recording allows you to conserve even more hard disk drive space than scheduled recording. When the hard disk drive is full, the DVR starts to overwrite the oldest data.

Refer to *Camera Menu* in the *Programming* section to set the start and stop times for recording.

If you need to stop recording a camera before the programmed end time, you must go back into the programming menus and turn off the automatic recording for that camera.

Recording example:

A company has a rear door that is not to be opened for any reason between 5 p.m. and 7 a.m. During the day, the area around this door is recorded continuously (scheduled recording), but to conserve disk space, the area is only recorded at night if the door is opened (event recording).

In this case, the recorder would be programmed for scheduled (continuous) recording from 7 a.m. to 5 p.m. and event recording from 5 p.m. to 7 a.m. (refer to *Camera Menu* in the *Programming* section).

SAVING VIDEO

When the hard disk drive is full, the DVR starts to overwrite the oldest data. Data should be backed up on a regular basis to ensure that important video is not lost.

NOTE: Turning off certain cameras does not save the video from those cameras. All turning off certain cameras does is provide more disk space to record other cameras. When the hard disk drive is full, the DVR will start overwriting the oldest video recorded.

To save video:

1. Connect a peripheral recording device, such as a VCR or video printer, to the VIDEO OUTPUT connector on the rear of the DVR.
2. Turn on the peripheral recording device. If the DVR is in the record mode, the video also will be recorded on the peripheral device. If the DVR is in the playback mode, the video will be recorded on the peripheral device.

TRANSFERRING DATA USING A USB FLASH DRIVE

WARNING: The transfer procedure that follows will format the USB flash drive (FAT or FAT32 format, which are the only formats the USB flash drive accepts). Formatting erases existing data on the USB flash drive. It cannot be recovered. Transfer to another medium any data on the USB flash drive that you do not want to lose.

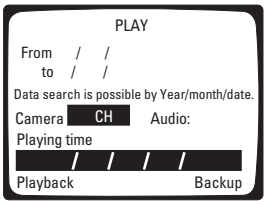
The following procedure transfers data onto the USB flash drive. (The amount is limited. For example, with audio enabled and recording four channels at a size of 4 KB and at 1 fps, you could transfer roughly 25 minutes onto a 32 MB USB flash drive. This is an estimate only and not an implied or expressed guarantee of actual storage. The amount you can store on the USB flash drive may vary based on video sources.)

NOTE: The DX1140-080 comes with a USB flash drive. If you are using a different USB flash drive, make sure it meets the following requirements:

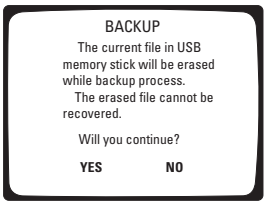
- USB 1.1 compliant
- Only offered as a storage device—no additional software features (such as security, mail, and others)
- 32, 64, 128, or 256 MB

Do the following:

1. Press the Play/Pause button.
2. Enter the password if requested. The Play screen appears.

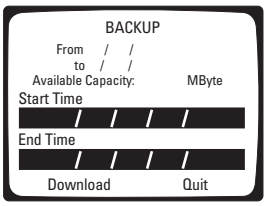


3. Use the Search (<</>>) buttons to select Backup and then press the Play/Pause button. (You do not have to choose a camera number and time.) The following confirmation screen appears, warning that data on the USB flash drive *will be erased and cannot be recovered*.


BACKUP
The current file in USB memory stick will be erased while backup process.
The erased file cannot be recovered.
Will you continue?
YES
NO

4. Use the Search (<</>>) buttons to select Yes to continue (or No to abort), and then press the Play/Pause button. If Yes, then a "Reading disk information" message appears.

   - If the USB flash drive is not inserted in the DVR or there is an error on the flash drive, the error message "Device not found" appears and you are returned to the Play window.
   - If there is no problem, you are returned to the Backup menu, as shown below, when the disk information has been read.



   - The Backup menu shows the first recording date and time and the last recording time, with the available recording capacity directly below.

5. To start the backup, use the Search (<</>>) buttons to enter the date and time to backup, select Download, and then press the Play/Pause button. If there are no problems, the percentage of backup completed is displayed. When finished, the message "Backup completed successfully" appears.

   However, the following messages can appear if there are problems:

   - If the amount of data to be backed up is more than the flash drive's available capacity, the error message "Less capacity" appears and you are returned to the Play window.
   - If the time range you selected is out of the range that was recorded, the error message "Wrong time setting" appears and you are returned to the Play window.
   - If a problem occurs during backup processing, the error message "Error on backup process" appears and you are returned to the Play window.

6. When backup to the USB flash drive is completed, insert the flash drive into the USB port on your PC and transfer the file to the PC.

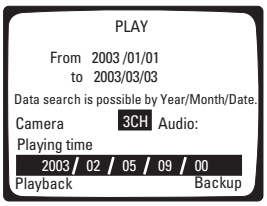
NOTE: Viewing software is exported with the video clip.

PLAYBACK

START PLAYBACK

To begin playback:

1. Press the Play/Pause button.
2. Enter the password if requested.
3. The Play window appears.



4. Press a number button (1-4) to select the camera to view. The camera channel appears on the screen.
5. Press the Search (<</>>) buttons to select Audio and then press the Play/Pause button to toggle ON/OFF. If you choose ON, audio will be outputted when video is played.
6. Press the Search (>>) button to go to the time and date fields. Select the time and date you want to play back. At the top of the window, the "From" and "to" fields show the time period that is recorded on the hard drive. You may choose the playback time within this period.

   At the bottom of the window are five fields for entering the playing time. The fields, from left to right, are for the year, month, day, hour, and minute. Use the Search (<</>>) buttons to move between the fields. In each field enter two digits. For numbers below 10, enter a 0 as the first digit. Enter the hour in 24-hour format; for example, 08 is 8 a.m. and 15 is 3 p.m.
7. Do one of the following:
   - If you intend to play back data from a *previous* software version, press the Play/Pause button.
   - If you want to play back data from a *new* software version, use the Search (<</>>) buttons to select Playback and then press the Play/Pause button.

   Playback begins. "PLAY" appears on the screen.

SEARCH

To search during playback, use the Search (<</>>) buttons. Press and hold the button for the direction you want to search. As you hold the button, the search increases speed. Release the button when you find the video you want to view.

FAST PLAYBACK

To increase the playback speed, press the Search (>>) button once.

To resume playback at normal speed, press the Pause/Play button once.

PAUSE PLAYBACK

To pause playback:

1. Press the Play/Pause button to pause playback. "Pause" appears on the screen.
2. Press the Play/Pause button again to resume playback.

FRAME-BY-FRAME PLAYBACK

To play back one frame at a time:

1. Press the Play/Pause button to pause playback. “Pause” appears on the screen.
2. Use the Search (>>) buttons to move forward one frame at a time.
3. Press the Play/Pause button again to resume normal playback.

CHANGE CAMERA BEING PLAYED BACK

To view a different camera during playback, press the number button (1-4) of the camera you want to observe. Playback starts at the beginning of the search time selected.

STOP PLAYBACK

To stop playback:

Press the Stop button. Playback stops and recording resumes if the DVR is programmed for automatic recording. Live video appears on the monitor if the Preview feature is turned on.

PLAYBACK FOLLOWING TIME CHANGES

The DVR uses the time and date to index video on the hard disk drive so you can find it later. Changing the time can cause the DVR to work improperly when you try to play back video. If you set the hour ahead, this is not a problem. But if you set the hour back, there will be more than one recording at the same time.

Figure 4 shows what happens when you set the hour back from 2 a.m. to 1 a.m., such as during the October Daylight Saving Time changeover. If you try to search for video between 1 a.m. and 2 a.m., the recorder may not operate properly because there will be two hours of recorded video during this time period. To view video during this overlapping time period, you must start playback before 1 a.m.; then the recorder will play both hours between 1 a.m. and 2 a.m., as shown in Figure 4.

You cannot do a backward search through the overlapping time period. You can, however, do a forward search.

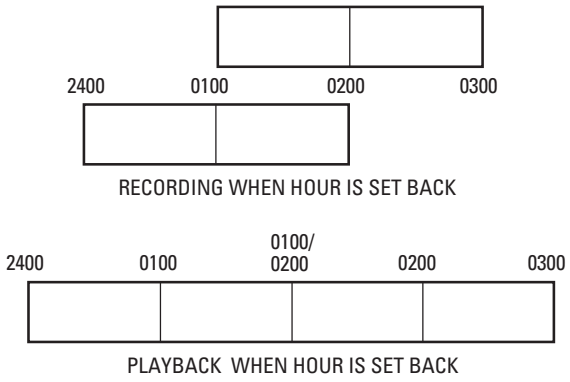


Figure 4. Recording and Playback When Hour Is Set Back

VIEWING RECORDINGS ON A PC

Using the viewer software that came with your DX1104-080, you can view video from the DVR that you save on your PC. To do so:

1. Save the data file from the DVR to the USB flash drive. (Refer to the *Transferring Data Using a USB Flash Drive* section.)
2. Move the file to your local PC into a folder that your create for that purpose. (Refer to the instructions that came with your flash drive for transferring the data from the USB flash drive to your computer.)
3. Locate the DX1100_Viewer.exe file on your PC. Double click to open the viewer.

   (The viewer file is on the DVR's hard drive and should be downloaded onto your PC. The viewer file is then automatically downloaded onto the USB flash drive every time data is transferred. Note also that in your PC's Control Panel, the Display settings must be set to 1024 x 768 for the viewer to display correctly on the PC screen.)
4. Locate the file you want to view by clicking the file folder icon in the lower left corner of the viewer. This opens a window where you can browse to find the file you want. These files have a .bin extension.
5. Once you locate the file, either double-click it or single-click it and then click Open.
6. Use the three icons to the right of the file name to control playback.
   - The icon on the left plays the file.
   - The center icon stops play.
   - The icon on the right moves the view frame by frame.

   Also, date and time are displayed in a window on the viewer. A bar below the time window shows your position in the file. You can also use the slider to change position.
7. When you finish viewing the file, click Exit to close.

The minimum PC requirements are as follows: Window® 98, Windows 2000, or Windows XP; Pentium 400 MMX and above; VGA 16 MB video, Sound Blaster-compatible sound card.

POWER FAILURE

In the event of a power failure, the DVR has battery backup to save the time and date and menu settings. The battery is good for three years.

ALARM OPERATION

When an alarm input on the rear of the DVR is triggered, two things can happen:

- The DVR will start recording.
- The alarm output relay will turn on a light or other device to alert you that there has been an alarm.

Application example:

A company has a rear door that is not to be opened for any reason between 5 p.m. and 7 a.m. During the day, the area around this door is recorded continuously, but the area is only recorded at night if the door is opened. The owner does not want to review the video unless the door was opened after hours.

In this case, the alarm output relay would be programmed to enable at 5 p.m. and disable at 7 a.m. (refer to *Alarm Output Menu* in the *Programming* section). The DX1100 would also be programmed for automatic (continuous) recording from 7 a.m. to 5 p.m. and event (alarm) recording from 5 p.m. to 7 a.m. (refer to *Camera Menu* in the *Programming* section).

At 5 p.m. continuous recording would cease. If an alarm input is activated, the DVR would immediately begin recording the associated camera. The relay would latch closed after the 20-second delay. When the owner returned in the morning, a light attached to the relay output would be on, indicating that there was an alarm during the night. A search for recorded video starting at 5 p.m. would immediately take you to the first alarm event. All other events could be reviewed in sequence.

ALARM RELAY OUTPUT OPERATION

Once the relay is triggered, it remains on until you manually turn it off. You can set the relay to arm itself automatically or you can manually arm the relay.

This relay operates independently of the event (alarm) recording in the camera setup menus. The relay does not start alarm recording. It only operates the device connected to the ALARM connectors on the rear panel.

Arming the Relay

Automatic armament is done in the Alarm Output menu, in which you specify the hours that the relay will operate if there is an alarm.

To manually arm the relay:

1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◀◀ : Alarm On
▶▶ : Alarm Off

2. Press and release the Search backward (<<) button, and then release the Function button. A 60-second countdown begins (the numbers appear on the screen) before the relay is armed. This is an exit feature that allows you to leave the area without tripping the alarm. Once the relay is armed, it remains armed until it is triggered or you disarm it.

Relay Operation

When an alarm input is activated, a 20-second countdown begins before the relay turns on the warning light or buzzer. The numbers appear on the screen. This is an entry feature that allows you to disarm the alarm when you enter your own premises.

Once the relay operates, the light or buzzer remains on until you manually turn off the relay.

Turning Off the Relay

1. Press and hold the Function button. The Function Key List appears. Keep holding the Function button.

FUNCTION KEY LIST
0 : Setup
1 : Camera 1 recording/stop
2 : Camera 2 recording/stop
3 : Camera 3 recording/stop
4 : Camera 4 recording/stop
5 : All the cameras recording
6 : All the cameras stop
◀◀ : Alarm On
▶▶ : Alarm Off

2. Press and release the Search forward (>>) button, and then release the Function button.

The relay is now turned off.

If you are manually controlling the operation of the relay, another alarm will not activate the relay. To arm the relay again, refer to the procedure in this section under *Arming the Relay.*

If the relay has been programmed to operate in the Alarm Output menu, another alarm will operate the relay as long as it is still within the programmed time period.

Troubleshooting

Symptom: You cannot stop recording even after pushing the Stop button.
Check the Camera menu for the camera(s) that will not stop recording. Make sure the Automatic Recording feature is turned off.

Symptom: There is no video on the monitor while the DVR is recording or is in recording standby mode (not recording).
Check the Camera menu for the camera(s). Make sure Preview is turned on.

Specifications

Electrical/Video

Input Voltage:	80-240 VAC, 50/60 Hz
Power Consumption:	20 watts
Signal System:	NTSC or PAL
Video Compression:	MPEG
Resolution:	352 x 240 pixels, true color
Recording Speed:	1-30 fps, depending on system setup
Video and Audio Storage:	80 GB hard drive
Video Inputs:	4
Video Outputs:	2 (1 monitor, 1 video printer)
Audio Input:	1, RCA pin jack, unbalanced level, 2.0 Vp-p (maximum),1.0 Vp-p (typical), 1 kohm or higher
Audio Output:	1, RCA pin jack, unbalanced level
Audio Output to Audio Input Gain:	X2 gain (typical)
Audio Compression:	G.723.1, 6.3 Kbps
Audio Size per Second:	Estimated 1 KB/sec
Alarm Inputs:	4, normally open dry contact
Alarm Output:	1, normally open, latching, Form A

Mechanical

Connectors

Alarm Inputs:	4 pairs, push-in
Alarm Output:	1 pair of relay contacts, push-in
Camera Inputs:	4, BNC
Monitor Output:	1, BNC
Video Printer Output:	1, BNC
USB Port:	1 USB 1.1 port*

USB Flash Drive (Supplied For a Limited Time Only)

Compliance	USB 1.1 compliant
Operating System	Windows® 2000, Windows® XP

General

Operating Temperature:	41° to 104°F (5° to 40°C)
Relative Humidity:	Maximum 80% noncondensing
Dimensions:	2.8 (H) x 9.1 (W) x 14.6 (D) inches (7 x 23 x 37 cm)
Weight:	7 lb (3.18 kg)

(Design and product specifications subject to change without notice.)

* USB compatibility has been successfully tested for these recommended USB flash drives:

Dell®	(64 MB)
Lexar JumpDrive™ V1.0	(64 MB)
Lexar JumpDrive™	(256 MB)
Lexar Media JumpDrive™	(128 MB)
Memorex®	128 MB)
Memory Experts ClipDrive Bio™	(64 MB)
SanDisk Mini Cruzer®	(256 MB)
Sony Micro Vault™	(128 MB)

REGULATORY NOTICES

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radio and Television Interference

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship for a **period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on the following fixed camera models: CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X.
- Three years on all other fixed camera models (including Camclosure® Integrated Camera Systems) and Genex® Series (multiplexers, server, and keyboard).
- Two years on all standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM8500/CM9500/CM9700 Series Matrix, DF5 and DF8 Series Fixed Dome products.
- Two years on Spectra®, Esprit®, and PS20 Scanners, including when used in continuous motion applications.
- Two years on Esprit® and WW5700 series window wiper (excluding wiper blades).
- Eighteen months on DX Series digital video recorders and NVR300 network video recorders.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

REVISION HISTORY

Manual #	Date	Comments
C617M	5/04	Original version.
C617M-A	7/04	Revised the manual to add material about the USB flash drive, which is included with the DX1104-080 for a limited time only.

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